

Appl. No. 10/666,399
Amdt. Dated March 18, 2005
Reply to Office Action of November 18, 2004

Amendments to Drawings:

The attached sheets of drawings include changes to FIGs. 1 and 2. These sheets, which include FIGs. 1 and 2, replace the original sheets including FIGs. 1 and 2. In FIG. 1 the word "SEPERATE" in box 22 has been corrected to "SEPARATE". In FIG. 2 the word "SEPERATE" in box 42 has been corrected to "SEPARATE".

Attachment: Replacement Sheet
 Annotated Sheet Showing Changes

Appl. No. 10/666,399
Amdt. Dated March 18, 2005
Reply to Office Action of November 18, 2004

REMARKS

Claim 13-19 and 33-37 drawn to a method for making a semiconductor device, are pending in this case.

Specification

The specification has been amended herein to correct clerical errors.

Drawings

FIGS. 1 and 2 have been amended herein to correct clerical errors as described above.

Claim Rejections

35 U.S.C § 102

The examiner rejected claims 13-17, 33-34 and 36-37 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,139,304 to Centofante. Of these rejected claims, claims 13 and 33 are rejected claims from which the remaining claims depend.

Regarding claims 13, 33 the examiner found that Centofante discloses a method for coating a plurality of semiconductor devices comprising providing a mold 100, with a formation cavity 24, mounting a plurality of semiconductor devices within said formation cavity 24, injecting or otherwise introducing curable coating material 34 into the mold to fill said mold formation cavity and at least partially cover the semiconductor devices 32, and curing or otherwise treating said coating material so that said semiconductor devices are at least partially embedded in said cured coating material.

Centofante and the examiner's comments have been studied

carefully and applicant respectfully disagrees with the examiner's findings. Applicant respectfully submits that the formation cavity 24 disclosed in Centofante is different from what is described by the Examiner and is different from the formation cavity in the claimed invention.

The mold 100 in Centofante (see FIG. 1) includes top plate 10, gate plate 20 and base plate 40. Top plate 10 includes inlet 11 that provides a path for injecting an encapsulating material into mold 100. Gate plate 20 includes gates 21, distribution runner 25 and ejection holes 26. Gates 21 communicate with inlet 11 through optional distribution runner 25. Alternatively, gates 21 may communicate directly with inlet 11. (Col. 5, lines 55-61).

Referring to FIGS. 2-5 and 2-6 in Centofante, an injected encapsulating material passes through inlet 11 into distribution runner 25 and from there through input 22 into gate 21 and through output 23 to cavity 24. Enough encapsulating material is injected to completely fill cavity 24, gate 21, distribution runner 25 and part of inlet 11. Each cavity 24 is formed so that the encapsulating material flows in and around a corresponding hole 31 in substrate 30 and over the semiconductor device. To encapsulate a small device, requires a small cavity 24 and small gate 21. (Col. 8, lines 47-55)

Referring to FIG. 2-9, the shape of cavity 24 and gate 21 may be seen in detail. The shape of cavity 24 is chosen to provide a package of hardened encapsulating material that completely encloses LED 32 and fills hole 31 adjacent to the LED 32. Cavity 24 may, however, be of any shape, and the shape will depend on the particular device being enclosed. (Col 9, lines 34-39). Referring to FIG. 2-11, cavity 24 encloses LED 32 and its adjacent hole 31. (Col. 10, lines 13-14).

Based on the above disclosure, Centofante teaches a

Appl. No. 10/666,399
Amdt. Dated March 18, 2005
Reply to Office Action of November 18, 2004

formation cavity 24 that is arranged to deposit an encapsulating material over a single LED 32 and to fill a single adjacent hole 31. For substrates having multiple LEDs 32, multiple formation cavities are provided. For example, a plate 20 for encapsulating multiple LEDs is disclosed, with the plate having multiple gates 21 and multiple cavities 24, each of which forms an encapsulating material over a respective one of the multiple LEDs (See FIGs. 2-7, 2-8 and 2-9).

By contrast, claims 13 and 33 in the present application include the limitation of "mounting a plurality of semiconductor devices within said mold formation cavity." Centofante does not disclose teach or suggest this limitation, instead only providing a single cavity 24 to encapsulate a single LED 32. There are other differences between the Centofante and the claimed invention, but for this reason alone claims 13 and 33 are allowable over Centofante.

To further distinguish these claims from Centofante, each has been amended to include the limitation of "providing a mold with a formation cavity for holding a plurality of semiconductor devices." As fully outlined above, Centofante does not disclose, teach or suggest this limitation. Further, Centofante does not provide the numerous advantages of having mold for multiple semiconductor devices as disclosed and claimed in the present application.

Applicant respectfully submits that claims 13 and 33 are allowable over Centofante. Claims 14-17, 34 and 36-37 depend from claims 13 and 33, and are also allowable.

35 U.S.C § 103

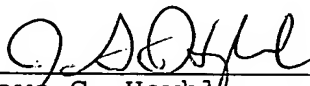
The examiner rejected claims 18, 19 and 35 under 35 U.S.C. § 103(a) as being unpatentable over Centofante in view of U.S. Patent No. 6,252,254 to Soules et al. Claims 18 and 19 depend

Appl. No. 10/666,399
Amdt. Dated March 18, 2005
Reply to Office Action of November 18, 2004

from allowable claim 13 and claim 35 depends from allowable claim 33. Accordingly, these claims are also allowable.

Applicants believe that all the claims are in condition for allowance and a timely issuance of a Notice of Allowance is respectfully requested.

Respectfully submitted,



Jaye G. Heybl
Attorney for Applicants
Registration No. 42,661

March 18, 2005

KOPPEL JACOBS PATRICK & HEYBL
555 St. Charles Drive, Suite #107
Thousand Oaks, CA 91360
(805) 373-0060

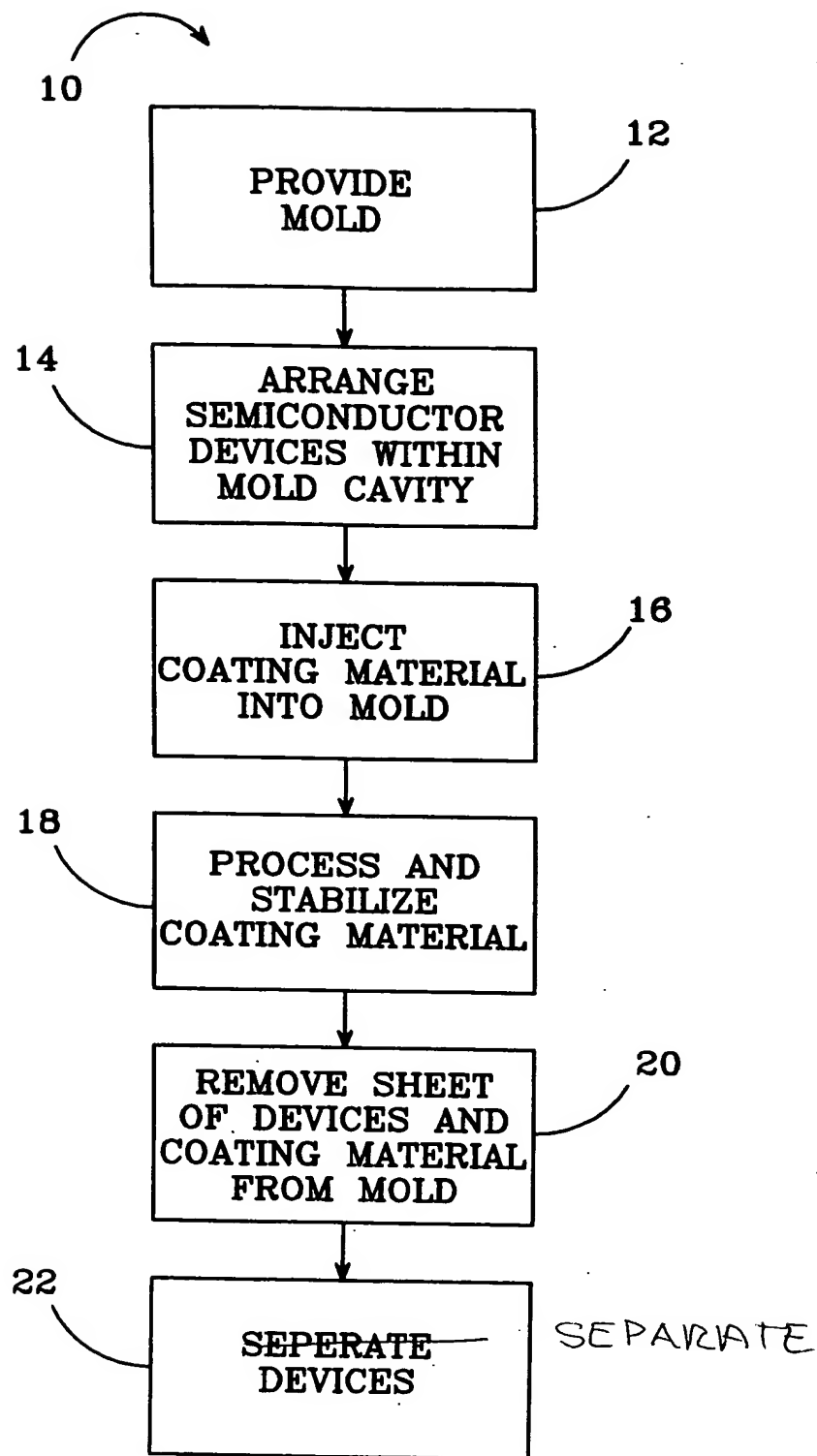


FIG.1

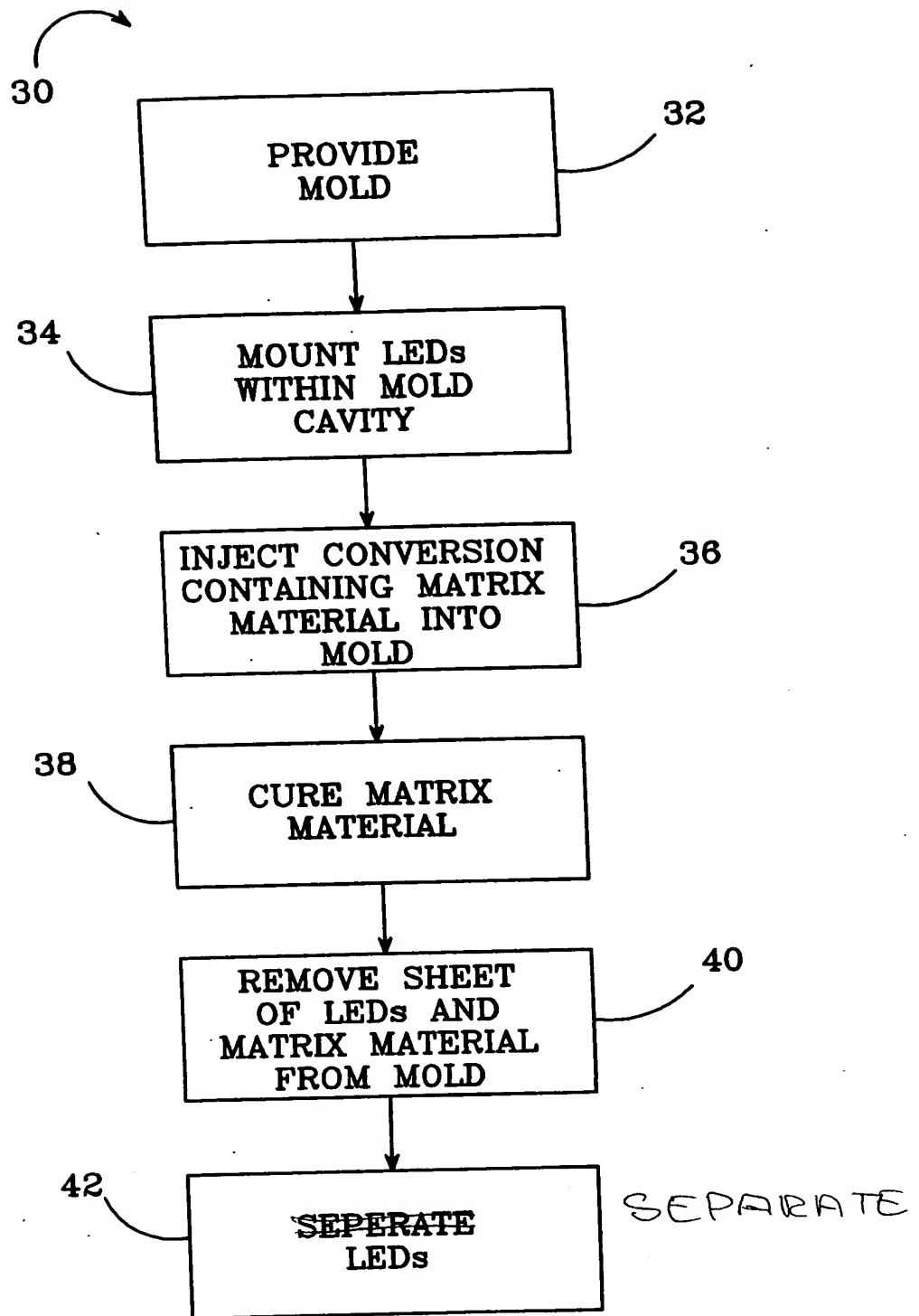


FIG.2